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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,743	06/27/2003	Michael L. Friedman	D0932-00356 (VW-8777)	7569

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EXAMINER
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THEXTON, MATTHEW

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

1.5

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,743	<b>Applicant(s)</b> FRIEDMAN ET AL.	
	<b>Examiner</b> Matthew A. Thexton	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 16-27, 33, 34, 36, 41-43, 48-53, 59, 66 and 124 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-27, 33, 34, 36, 41-43, 48-53, 59, 66 and 124 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>four sheets</u> . | 6) <input type="checkbox"/> Other: ____  |

MC

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed 2003 November 20 has been considered as to the merits.

The second citation of Brandl et al. has been lined through as duplicative.

The citation of Schuler et al. has been lined through because it is in a non-English language.

### ***Specification***

The disclosure is objected to because of the following informalities: In paragraph 48, line 1, there is an apparent extraneous occurrence of "of" after "from which."

Appropriate correction is required.

### ***Claim Version***

The claims as presented in the preliminary amendment of 2003 June 27 have been examined.

### ***Claims Analysis***

Claims 14, 15, 28-32, 35, 37-40, 44-47, 54-58, 60-65, 67-123, 125-130 have been canceled.

Claim 1 is directed to a mixture comprising a polymer and mineralized ash filler. Mineralized ash is defined in paragraph 27 of the specification.

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Dependent claims 2-13, 16-27, 33, 34, 36, 41-43, and 48-53 variously further limit the type of polymer, the presence of a mix of polymers, the miscibility relationship of the mix of polymers, the amount of mineralized ash, the viscosity under certain conditions, the ash being fly ash or coal fly ash, specific metal leachability property under certain test method, the particle size characteristics of the ash, the presence of another filler, the additional filler being nanofiller, nanoclay, or surface-treated montmorillonite, the amount of additional filler, particle size characteristic of the additional filler, the mixture comprising a manufactured article, the article being a building material, a plank, an ornamental building material, or a structural building material.

Independent claim 59 is directed to methods of making a mixture comprising "incorporating" a mineralized ash filler into a polymer resin and thereafter "solidifying" the resin. Claim 66 depends from claim 59 and further requires the polymer [sic] "is formed" into a shape selected from the group of plank, sheet, tube, and pellet, prior to solidifying.

Independent claim 124 is directed to methods "of increasing the tensile modulus of a plastic" comprising "incorporating" up to about 60 weight percent of mineralized ash filler into the plastic.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13, 16-27, 33, 34, 36, 41-43, 48-53, 59, 66, and 124 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Each of the independent claims relies upon the definition of "mineralized" ash, as set forth in paragraph 27 of the specification, with further information in paragraph 91. The following deficiencies are noted which reveal a lack of sufficient particularity that one skilled in the art would recognize that Applicant had possession of the claimed invention: (1) the "product" is said to comprise not more than 20 % of the metal content for any individual metal listed in Table 1 relative to standard fly ash, but the basis is not set forth, i.e., weight, mole, volume; (2) the "product" is compared to standard fly ash, but there is no identification of the standard fly ash, which is crucial since the art of fly ash recognizes that there is no "standard" fly ash because it varies from combustion source to combustion source and even from incineration unit to incineration unit within a single facility; (3) it is unclear whether Applicant's definition of "mineralized" fly ash with respect to the metals includes Arsenic, which is listed in Table 1, but which is usually not considered a metal; (4) the entries in Table 1 for metal values for the two commercialized entities have unreported amounts of nickel and zinc for test 1, and for silver for test 2, and thus it is unclear whether these exemplary materials meet

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Applicant's definition; (5) the entries in Table 1 for metal values for the two commercialized entities have been obtained using a procedure different from that described in paragraph 27, and thus it is unclear whether these exemplary materials meet Applicant's definition; (6) the procedure set forth in paragraph 27 employs 50 ml of leachant at  $\text{pH} < 2$ , but fails to specify which acid to use which is critical since in the choice of complexing agent is well known to affect the efficacy of metal value extraction and thus the skilled artisan does not know what is test to determine "mineralized" ash; (7) the "product" is said to comprise not more than 20 % of the metal content for any individual metal listed in Table 1, but it is not clear whether "...any individual metal listed..." means for each (i.e., for all of them simultaneously), or means for any one of them.

The deficiencies are not cured or avoided by the examples, as set forth in paragraphs 91 and 98, because there is insufficient description of the commercial products used to permit the public to duplicate the examples. The website for American Ash Recycling Corporation lists two production facilities, one in Tennessee, one in Pennsylvania, which produce de-metallized Municipal Waste Combustion ash, the products having properties different from each other. Neither is a coal derived fly ash (as required by claim 18). The specification fails to describe the claimed invention by way of example(s).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 66 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 66 recites the limitation "the polymer" in line 1. There is insufficient antecedent basis for this limitation in the claim. Apparently this is intended to mean "the plastic."

Claims 1-13, 16-27, 33, 34, 36, 41-43, 48-53, 59, 66, and 124 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The hereinabove conclusion that the claimed invention is not adequately described further supports the conclusion that the claims fail to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

### ***Claim Rejections***

Rejections over prior art have not been made because the claimed subject matter is not known with sufficient clarity to support an understanding of the scope of the claimed subject matter.

### ***Citation of Pertinent Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Chiang et al. "Recovery of Heavy Metals in ..." discloses methods of treating electrostatic precipitator ash from municipal solid waste incinerator to remove metal values.

Wallace (US 4336284) discloses subject matter concerning utility of coal fly ash as filler for polymeric matrices.

Prutkin et al. (WO 97/11114-A1) is cited to further show the state of the art.

Banerjee (US 5030662) is cited to further show the state of the art.

Hamada et al. (JP 09-048878-A, as evidenced by JPO machine translation) is cited to further show the state of the art.

O'Hara et al. (US 4737356) is cited to further show the state of the art.

Arcaini et al. (US 5992776-A) is cited to further show the state of the art.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Monday-Friday, 9:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*M. A. Thexton*

Matthew A. Thexton  
Primary Examiner  
Art Unit 1714